

An isolated protein designated p27 is disclosed. The p27 protein has an apparent molecular weight of about 27 kD, and is capable of binding to and inhibiting the activation of a cyclin E - Cdk2 complex. A nucleic acid sequence encoding p27 protein is disclosed, as well as a method for producing p27 in cultured cells. *In vitro* assays for discovering agents which affect the activity of p27 are also provided. Methods of diagnosing and treating hypoproliferative disorders are provided.